

CLAIMS

What is claimed is:

1. A material management system for tracking one or more bales of material at one or more locations, the system including:
 - 5 one or more balers at one or more of the locations, each baler adapted to produce a bale; one or more weight measurement devices in communication with one or more balers, each weight measurement device adapted to determine the weight of a bale; one or more weight recording devices to record the weight of a bale.
 - 10 2. The material management system of claim 1, where one or more of the weight measurement devices include a load cell.
 - 15 3. The material management system of claim 1, where:
 - one or more of the weight measurement devices are adapted to perform weight measurement using one or more procedures selected from the group consisting of:
 - measure a distance traveled by a compression plate in a baler when it compacts material in the baler, and based on the distance traveled by the compression plate, determine the weight of the bale;
 - measure a pressure within a hydraulic system operable to compress material in the baler, while the hydraulic system compacts material in the baler, and based on the measured pressure, determine the weight of the bale;
 - 20 measure a pressure on the compression plate when it compacts material in the baler, and based on the measured pressure, determine the weight of the bale;
 - measure a current drawn by a motor while compacting the bale, and based on the measured current, determine the weight of the bale.
 - 25 measure a pressure exerted by an ejector coupled to the baler while it ejects the bale, and based on the measured pressure, determine the weight of the bale; and measure a current drawn by the ejector while ejecting the bale, and based on the measured current, determine the weight of the bale.

4. The material management system of claim 1, where one or more weight recording devices record the weight of the bale in a baler.
5. The material management system of claim 1, where:
 - one or more weight recording devices:
 - record a number of bales ejected from one or more balers; and
 - record a weight of each bale ejected from one or more balers.
6. The material management system of claim 1, where:
 - one or more weight recording devices, for one or more balers:
 - determine when the baler will reach a target level of fullness; based on the weight of the bale in the baler and customer usage patterns.
7. The material management system of claim 1, where the target level of fullness is about completely full.
8. The material management system of claim 1, where one or more weight recording devices record the weight of one or more bales.
- 15 9. The material management system of claim 6, where, for each of the balers: one or more weight recording devices determine the fullness of the baler based on the weight of the bale in the baler and properties of the material in the baler, including density.
10. The material management system of claim 1, where:
 - one or more weight recording devices:
 - determine when one or more bales should be removed from a location; and
 - notify a bale hauler of when the bales should be removed.
11. The material management system of claim 1, where:
 - one or more weight recording devices are located at a customer location; and
 - one or more weight recording devices are located at a recycler location.
- 25 12. The material management system of claim 1, where a weight recording device:
 - remotely records the weight and number of bales ejected from one or more balers;

remotely determines when one or more bales should be removed from a location.

13. The material management system of claim 10, where remotely determining when to remove one more bales from a location includes considering customer preferences.

14. The material management system of claim 10, where remotely determining when to remove one more bales from a location includes considering bale hauler limitations.
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15. The material management system of claim 1, including:

one or more sensors for measuring one or more quantities related to the weight of the bale, the sensors in communication with the baler and producing an output; and
where:

10 one or more weight measurement devices are in communication with one or more sensors; and the one or more weight measurement devices remotely determine the weight of the material in a baler based output of the one or more sensors.

16. A method for managing material at one or more locations, including, at one or more locations:

- aggregating material into a bale in a baler;
- 5 determining a weight of the bale in the baler; and
- determining when the baler will reach a target fullness based on baler usage.

17. The method of claim 16, where the target fullness is when the baler is about completely full.

18. The method of claim 16, where determining the weight of the bale in the baler includes
10 measuring a quantity selected from the group consisting of:

- the weight of the bale;
- a distance traveled by a compression plate in a baler when it compacts material in the baler;
- a pressure on the compression plate when it compacts material in the baler;
- 15 a current drawn by a motor while compacting the bale;
- a pressure exerted by an ejector coupled to the baler while it ejects the bale; and
- a current drawn by the ejector while ejecting the bale.

19. The method of claim 16, including determining when to eject the bale.

20. The method of claim 16, including, for one or more locations:

- 20 recording a number and weight of ejected bales;
- determining when to remove one or more bales from the location, considering the projected full time;

21. The method of claim 20, where determining when to remove one or more bales includes considering the number of ejected bales, the weight of ejected bales, and the weight of the bale in the baler.
22. The method of claim 20, where determining when to remove one or more bales includes receiving and considering user input.
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23. The method of claim 20, including determining when to accomplish the scheduling of bale removal.
24. The method of claim 20, where determining when to remove one or more bales includes considering one or more customer preferences.
- 10 25. The method of claim 20, where determining when to remove one or more bales includes considering one or more bale hauler limitations.
26. The method of claim 20, where the determination of when to remove one or more bales from the location is performed at a remote location, relative to the location of the baler.

27. A baler adapted to prepare a bale of recyclable material, including:
- a compression plate in communication with a piston, the compression plate and piston adapted to compact material in the baler;
 - one or more sensors for measuring one or more quantities related to the weight of the bale, the sensors in communication with the baler;
 - 5 a computational device in communication with the sensor for determining the weight of the bale based on the measured quantity; and
 - a weight recording device in communication with the computational device, where the weight recording device records the weight of the bale.
- 10 28. The baler of claim 27, where the weight recording device is adapted to determine a fullness of the baler.
29. The baler of claim 28, where the computational device is adapted to send a signal indicative of the fullness of the baler.
30. The baler of claim 27, where the computational device is adapted to send a signal indicative 15 of the weight of the material in the baler.
31. The baler of claim 27, where the weight recording device is adapted to determine when the baler will reach a target level of fullness.
32. The baler of claim 27, where the weight recording device is adapted to send a signal indicative of when the baler will reach a target level of fullness.
- 20 33. The baler of claim 27, where recyclable material includes one or more materials selected from the group consisting of: cardboard, glass, aluminum, steel, plastic, and paper.